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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nabil R. Yousef

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EXAMINER

ANDRAMUNO, FRANKLIN S

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/079,367	Applicant(s) YOUSEF ET AL.	
	Examiner FRANKLIN S. ANDRAMUNO	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/20/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/20/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, and 8-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ertel et al (US 7,031,290 B2) in view of Ariyoshi et al (US Patent 5,930, 244). Hereinafter referred as Ertel and Ariyoshi.

Regarding claims 1 and 6, Ertel discloses a cable modem system that is operable using synchronous code division multiple access for a plurality of channels **(column 1 lines 15-19)**, comprising: a plurality of channels; a channel termination system **(User Equipment (12) in figure 1)** and a channel network segment that communicatively couples the channel termination system to the plurality of channel; and wherein the channel termination system is operable to provide network access to each channel within the plurality of channel **(Core Network (14) in figure 1)**, the network access being provided using a plurality of channel user signals, each channel user signal being transmitted from the channel termination system to at least one of the channel within the plurality of channel **(Multi-element adaptive array in figure 1)**; the channel termination system spreads each of the channel user signals using an orthogonal code to generate a plurality of orthogonal code spread channel user signals **(column 1 lines 51-54)**; the channel termination system sums plurality of orthogonal

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code spread channel user signals together to generate a summed, orthogonal code spread signal (**Figure 9**); the channel termination system spreads the summed, orthogonal code spread signal using a pseudo-noise code to generate a pseudo-noise code signal (**column 1 lines 15-19**); the channel termination system provides pseudo-noise code synchronization information to at least one channel (**User equipment (12) in figure 1**); the at least one channel within the plurality of channel de-spreads the pseudo-noise code signal using the pseudo-noise code to generate a pseudo-noise de-spread channel user signal; and the at least one channel de-spreads the pseudo-noise de-spread channel user signal using the orthogonal code. **However, Ertel fails to disclose the** use of a plurality of cable modem. Ariyoshi shows in (**figure 10**) of a network comprising a plurality of terminal stations. Also, Ariyoshi discloses in (**column 6 lines 38-42**) of a pseudo noise generator.

Therefore, it would have been obvious at the time of the invention to include the use of a cable modem. This is a useful combination because it allows a communication network to be added with clients without risking the degradation of quality.

Regarding claims 3 and 8, Ariyoshi discloses the cable modem system of claim 1, further comprising a modulator, communicatively coupled to the cable modem termination system (**Terminal Station (402) in figure 10**), that modulates the pseudo-noise code signal; and the modulated pseudo-noise code signal being transmitted from the cable modem termination system to the at least one cable modem via the cable modem network segment (**PN generator (321) in figure 9**).

Regarding claims 4 and 9, Ertel discloses the cable modem system of claim 1, wherein the cable modem termination system performs transmit equalization of a communication path **(Matched filter/Equalization (32) in figure 2)**, between the cable modem termination system and the at least one cable modem, within the cable modem network segment **(Network in figure 10 (Ariyoshi))**

Regarding claims 5 and 10, Ariyoshi discloses the cable modem system of claim 4, wherein the orthogonal code spreading and the pseudo-noise code spreading operate cooperatively to minimize effects of multi-path across the communication path **(Figure 9)**.

Regarding claim 11, Ariyoshi discloses a cable modem that is operable using synchronous code division multiple access, comprising: a transmit block comprising an orthogonal code spreader and a pseudo-noise spreader **(transmitting phase controller (315) in figure 9)**; and a receive block comprising a pseudo-noise de-spreader and an orthogonal code de-spreader **(Received signal (Rx) in figure 8)**; and wherein the transmit block **(Transmitting signal (Tx-i) in figure 8)** being operable to spread a cable modem user signal using the orthogonal code **(Orthogonal Code in figure 8)** spreader to generate an orthogonal code spread cable modem user signal **(Orthogonal Code Generator in figure 8)**; the transmit block being operable to spread a orthogonal code spread cable modem user signal using the pseudo-noise code spreader to generate a pseudo-noise code spread cable modem user signal **(PN generator (PNr) in figure 8)**; the receive block being operable to de-spread a received cable modem user signal using the pseudo-noise code de-spreader to generate an

orthogonal code spread de-cable modem user signal; and the transmit block being operable to de-spread the orthogonal code spread de-cable modem user using the pseudo-noise de-spreader **(Reverse link synchronization controller (103) in figure 4)**.

Regarding claim 12, Ariyoshi discloses the cable modem of claim 11, wherein the transmit block further comprises a modulator and the receive block further comprises a de-modulator **(column 13 line 16)**; the modulator modulates the pseudo-noise code spread cable modem user signal before transmission to a cable modem termination system via a cable modem network segment **(column 13 line 31)**; and the de-modulator de-modulates the received cable modem user signal, the received cable modem user signal being received from the cable modem termination system via the cable modem network segment **(figure 10)**

Regarding claim 13, Ariyoshi discloses the cable modem of claim 11, wherein the cable modem termination system is operable to provide network access to the cable modem **(figure 1)**.

Regarding claim 14, Horne discloses the cable modem of claim 13, wherein the network access comprises Internet access **(column 3 lines 64-66)**.

Regarding claim 15, Ertel discloses the cable modem of claim 11, further comprising a front-end filter that is operable to perform ingress cancellation filtering **(Matched filter/Equalization (32) in figure 2)**.

Regarding claims 16, 21, and 26, Ariyoshi discloses a cable modem signal transmission method, comprising: spreading an input signal using an orthogonal code thereby generating an orthogonal code spread signal (**Orthogonal Code Generator (212) in figure 5**); spreading the orthogonal code spread signal using a pseudo-noise code thereby generating a pseudo-noise code spread signal (**PN generator (211) in figure 5**); transmitting the pseudo-noise code spread signal from a transmitter to a receiver; de-spreading the received signal using the pseudo-noise code thereby generating a pseudo-noise code de-spread signal (**Transmitting signal in figure 6**); and de-spreading the pseudo-noise code de-spread signal using the orthogonal code thereby generating an orthogonal code de-spread signal (**figure 7**). Performing hard limiting on the average filtered signal to make hard bit decisions (**column 11 lines 44-51**)

Regarding claims 17, 22, and 27, Ariyoshi discloses the method of claim 16, wherein the transmitter comprises a cable modem; and the receiver comprises a cable modem termination system (**figure 7**).

Regarding claims 18, 23, and 28, Ariyoshi discloses the method of claim 17, wherein the cable modem and the cable modem termination system are communicatively coupled via a cable modem network segment (**figure 10**).

Regarding claims 19, 24, and 29, Ariyoshi discloses the method of claim 16, wherein the transmitter comprises a cable modem termination system; and the receiver comprises a cable modem (**Figure 12**).

Regarding claims 20, 25, and 30, Ariyoshi discloses the method of claim 19, wherein the cable modem and the cable modem termination system are communicatively coupled via a cable modem network segment (**figure 10**).

3. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ertel et al (US 7,031,290 B2) in view of Ariyoshi et al (US Patent 5,930, 244) in view of Horne (US Patent 7,012,884 B2). Hereinafter referred as Ertel, Ariyoshi, and Horne.

Regarding claims 2 and 7, Ariyoshi discloses the cable modem system of claim 1, wherein the network access provided to each cable modem (**figure 12**) within the plurality of cable modems comprises Internet access. **However, Ariyoshi fails to disclose** the use of internet. Horne discloses (**column 3 lines 64-66**) of a system which has access to the internet.

Therefore, it would have been obvious at the time of the invention to include the use of the internet. This is a valuable feature for users to have access to the web and research a desired interest.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKLIN S. ANDRAMUNO whose telephone number is (571)270-3004. The examiner can normally be reached on Mon-Thurs (7:30am - 5:00pm) alternate Fri off (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571)272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chris Kelley/
Supervisory Patent Examiner, Art
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